1:Gifford E-5 (1915-1918)1926
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Concerning cephalic index in southern California, Boas writes:[2] "It is of interest to note that a secondary maximum of frequency of the length-breadth index of the Mission Indians is found at 79, and that it is most strongly developed among the Indians of San Luis Rey, who lived in the closest proximity to the long-headed islanders. It is quite probable that this maximum may be due to intermixture." For measurements of the long-headed islanders referred to, see table 32 of this paper.

The average cephalic, facial, and nasal indices for Serrano, Luiseño, and Diegueño in the following table are based on Boas' series of children, ranging in age from five to seventeen years for the Serrano, from six to twenty for the Luiseño, and from six to eighteen for the Diegueño.

Head deformation is doubtless responsible in part for the higher of the average cephalic indices in the two following tables (3 and 4):

TABLE 3

CALIFORNIAN TYPE

Narrow-nosed Subtype—Averages

	CI	FI	NI	NH	SW
Hupa	82[20]	83[20]	78[20]	168[20]	153[14]
Karok	86[13]	86[9]	72[9]		144[7]
Hill Patwin	82[14]	85[10]	79[11]	165[9]	
Valley Patwin	85[9]	83[9]	80[9]		
Northwestern Maidu (Valley)†	83[9]	82[9]	76[9]	161[5]	
Atsugewi	86[17]	83[12]	74[12]	165[9]	154[7]
Achomawi	84[21]	85[20]	73[20]	167[9]	153[7]
Modoc	86[13]	82[9]	74[9]	162[9]	155[7]
Klamath	80[20]	81[17]	75[18]	167[20]	160[9]
Northern Paiute	80[18]	83[11]	79[11]	169[9]	160[9]
Eastern Mono	83[9]	85[9]	79[9]	164[4]	156[4]
Washo	84[11]	82[20]	77[11]	173[9]	159[9]
Northern Miwok	86[9]	87[9]	78[9]	173[3]	151[3]
Central Miwok	86[16]	84[16]	79[16]	165[9]	152[9]
Southern Miwok	86[20]	81[13]	78[13]	166[9]	153[4]
Northern Hill Yokuts	81[16]	86[16]	80[16]	164[4]	151[4]
Cahuilla	82[20]	83[9]	79[9]	167[20]	158[20]
Serrano	82[20]	85[18]	79[20]	171[18]	159[9]
Luiseño	81[16]	89[16]	77[16]	169[20]	157[16]
Diegueño	82[18]	83[18]	77[18]		164[4]

* From Franz Boas, Verhandlungen Berliner Gesell. f. Anthr. Ethn. Urgesch., pp. 370, 371, 1888. Boas' Klamath figure perhaps includes Modoc as well as Klamath.

† The Northwestern Maidu (Valley) occupy the narrow triangular western strip, with apex at north, of area 17b, as shown on maps 2 and 3. The remainder of area 17b is occupied by the Northeastern Maidu (Hill).

[2] *Ibid.*, 202, 209.

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Seven groups are represented by measurements of but a single individual each, making it impossible to definitely classify them. They are listed below.

TABLE 6

GROUPS REPRESENTED BY SINGLE INDIVIDUALS

	CI	FI	NI	SM	SW
Barbareño	82	76	93		
Cocopa	86	87	73		163
Antoniano	84	83	86	167	
Northeastern Pomo	78	86	84	157	
Yahi	84	86	77		
Central Yana	81	81	85		
Northern Yana	87	81	87	169	

AVERAGE MEASUREMENTS OF THE LIVING

Tables 7 to 30 present the average measurements of living Californian Indians who are not mixed as to tribal blood so far as known.

Measurements of mixed-blood Indians and individuals with Caucasian, Mongolian, or Negro blood, not hitherto published, are presented in the latter portion of this paper.

TABLE 7

CEPHALIC INDEX

Y4
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Y6
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Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	6	80		N. Yana	1	87	
Yurok	49	83	3.06	Atsugewi	17	86	4.35
Karok	12	85	3.64	Achomawi	15	84	4.34
Chimariko	1	90		Modoc	13	86	3.11
Hupa	60	82	2.79	Klamath	20	90	3.82
Chilula	1	82		N. Paiute	16	90	3.01
Whilkut	1	84		E. Mono	6	82	
Wailaki	7	74		Washo	16	84	2.30
Kato	3	77		N. Miwok	2	88	
Yuki	65	76	2.98	C. Miwok	16	88	3.16
Huchnom	3	79		S. Miwok	12	80	2.39
N. Pomo	32	80	4.11	W. Mono	19	76	2.76
NE. Pomo	1	78		N. H. Yokuts	13	81	3.33
E. Pomo	4	83		T. K. Yokuts	6	82	
SE. Pomo	4	84		Antoniano	1	84	
H. Patwin	14	88	3.84	Barbareño	1	82	
V. Patwin	6	85		Serrano	19	88	3.27
Nomlaki	6	79		Luiseño	43	81	2.72
N.W. Maidu (V.)	5	82		Cupeño	9	82	
NW. Maidu (H.)	43	79	2.91	Cahuilla	32	82	4.14
NE. Maidu	8	81		Diegueño	35	82	2.75
S. Maidu	6	84		Mohave	31	80	4.6
Yahi	1	84		Yuma	6	87	
C. Yana	1	81		Cocopa	1	86	

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Cephalic indices for certain groups have been published by Boas and ten Kate. For the Hupa, Boas gives 80.2 as the average of a series of twenty-two; for the Lower Klamath (probably mostly Yurok) he gives 83.0 as the average index for a series of eighteen.[4] The Hupa figure is two points lower than mine, while the "Yurok" is identical with mine. Herman F. C. ten Kate gives the Mohave average cephalic index as 87.07 on the basis of forty cases.[5] This is two points below Boas' figure of 89.4, which I give in table 7.[6] The figure for the Yuma in table 7 is from ten Kate.[7]

TABLE 8

FACIAL INDEX

Men 19 years and over; women 17 years and over

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Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	6	82		C. Yana	1	81	
Yurok	33	81	3.80	N. Yana	1	81	
Karok	6	86		Atsugewi	12	83	5.29
Hupa	29	82	3.77	Achomawi	22	85	3.58
Wailaki	7	78		Modoc	8	82	
Kato	2	77		Klamath	17	81	5.41
Yuki	58	78	3.85	N. Paiute	11	83	5.20
Huchnom	3	75		E. Mono	6	85	
N. Pomo	23	79	5.21	Washo	10	82	3.84
NE. Pomo	1	86		N. Miwok	2	87	
E. Pomo	3	84		C. Miwok	16	84	4.47
SE. Pomo	2	84		S. Miwok	12	81	3.61
E. Patwin	10	85	2.94	W. Mono	19	83	4.08
V. Patwin	2	83		N. H. Yokuts	13	86	5.12
Nomlaki	6	81		Antoniano	1	83	
NW. Maidu (V.)	5	84		Barbareño	1	76	
NW. Maidu (H.)	26	82	4.07	Luiseño	1	79	
NE. Maidu	8	81		Cahuilla	8	83	
S. Maidu	5	83		Diegueño	1	86	
Yuki	1	86		Cocopa	1	87	

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[4] Franz Boas, Zur Anthropologie der nordamerikanischen Indianer, Zeitschrift für Ethnologie, XXVII, 391, 1895.

[5] Jour. Am. Ethn. Arch., III, 134, 1892.

[6] Op. cit., p. 391.

[7] Op. cit., p. 134.

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
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Yurok NS 31

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TABLE 9

NASAL INDEX

Men 19 years and over; women 17 years and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	6	83		C. Yana	1	85	
Yurok	33	85	8.07	N. Yana	1	87	
Karok	6	72		Atsugewi	12	74	6.47
Chimariko	1	96		Achomawi	22	73	4.60
Hupa	29	78	6.25	Modoc	8	74	
Wailaki	7	86		Klamath	18	75	6.62
Kato	2	82		N. Paiute	11	78	7.96
Yuki	58	87	9.61	E. Mono	8	75	
Huchnom	3	87		Washo	11	77	5.29
N. Pomo	25	91	10.82	N. Miwok	2	78	
NE. Pomo	1	84		C. Miwok	16	79	5.68
E. Pomo	3	84		S. Miwok	12	78	4.70
SE. Pomo	2	91		W. Mono	19	78	7.32
H. Patwin	11	79	10.00	N. H. Yokuts	13	80	8.51
V. Patwin	2	80		Antoniano	1	86	
Nomlaki	6	83		Barbareño	1	93	
NW. Maidu (V.)	5	76		Luiseño	1	81	
NW. Maidu (H.)	37	85	7.29	Cahuilla	8	78	
NE. Maidu	3	85		Diegueño	1	78	
S. Maidu	5	83		Mohave	38	82	
Yahi	1	77		Cocopa	1	73	

Yo [141]

TABLE 10

EAR INDEX

Group	No.	Mean	SD	Group	No.	Mean	SD
S. Maidu	5	55		N. Miwok	2	50	
N. Yana	1	55		C. Miwok	6	48	
Atsugewi	12	50	3.80	S. Miwok	12	49	3.47
Achomawi	20	50	3.74	W. Mono	14	51	3.00
N. Paiute	13	50	6.10	N. H. Yokuts	13	46	3.74
E. Mono	8	53		Cocopa	1	50	
Washo	16	51	4.10				

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1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
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TABLE 11

REACH INDEX—MEN

19 to 60 years of age

Group	No.	Mean	SD	Group	No.	Mean	SD
Yurok	11	105	2.74	Achomawi	8	102	
Hupa	9	103		Modoc	5	106	
Wailaki	3	107		Klamath	9	105	
Yuki	20	105	1.34	N. Paiute	6	104	
N. Pomo	8	106		E. Mono	3	107	
E. Pomo	1	101		Washo	6	102	
H. Patwin	1	103		N. Miwok	1	105	
Nomlaki	2	105		C. Miwok	4	101	
NW. Maidu (V.)	4	104		S. Miwok	3	103	
NW. Maidu (H.)	23	104	2.54	W. Mono	5	103	
NE. Maidu	6	106		N. H. Yokuts	4	104	
S. Maidu	1	102		Antoniano	1	107	
N. Yana	1	105		Barbareño	1	102	
Atsugewi	5	103		Cahuilla	2	107	

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TABLE 12

REACH INDEX—WOMEN

17 to 60 years of age

Group	No.	Mean	SD	Group	No.	Mean	SD
Yurok	13	102	2.71	Klamath	5	104	
Karok	1	103		N. Paiute	2	99	
Hupa	14	103	2.39	E. Mono	3	103	
Wailaki	1	103		Washo	5	103	
Kato	1	103		N. Miwok	1	100	
Yuki	25	102	1.92	C. Miwok	1	104	
Huchnom	1	106		S. Miwok	4	103	
N. Pomo	11	103	1.85	W. Mono	7	103	
E. Pomo	1	103		N. H. Yokuts	9	103	
Nomlaki	2	106		Luiseño	1	104	
NW. Maidu (H.)	9	101		Cupeño	1	104	
NE. Maidu	2	103		Cahuilla	6	104	
Atsugewi	4	102		Diegueño	1	106	
Achomawi	10	103	1.41	Cocopa	1	103	
Modoc	2	104					

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1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
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TABLE 13

STATURE—MEN

19 to 60 years of age

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	1	165		Klamath	30	167	
Yurok	11	164	6.22	N. Paiute	6	169	
Hupa	32	166		E. Mono	3	164	
Wailaki	3	154		Washo	6	173	
Yuki	20	157	5.33	N. Miwok	1	173	
N. Pomo	8	164		C. Miwok	4	165	
NE. Pomo	1	157		S. Miwok	4	166	
E. Pomo	2	169		W. Mono	5	165	
H. Patwin	2	169		N. H. Yokuts	4	164	
Nomlaki	2	165		T. K. Yokuts	16	168	7.01
NW Maidu (V.)	4	160		Antoniano	1	167	
NW. Maidu (H.)	22	163	6.75	Barbareño	1	171	
NE. Maidu	6	167		Serrano	24	171	4.98
S. Maidu	1	162		Luiseño	52	169	7.86
N. Yana	1	169		Cupeño	14	168	4.10
Atsugewi	5	163		Cahuilla	28	167	5.07
Achomawi	8	167		Mohave	45	171	
Modoc	5	162		Yuma	37	172	

The Mohave and Yuma statures of men and women are after Hrdlička.[8] Ten Kate gives the average stature of thirty-five Mohave men as 174 cm., and of three(?) women as 173 cm.,[9] both in excess of Hrdlička's average of 171 cm. for men and 158 cm. for women.

The average stature of the Cahuilla men is from Boas,[10] as are also the average statures of thirty-two Hupa and thirty Klamath men, which are taken from the German paper just cited.

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[8] Ales Hrdlička, On the Stature of the Indians of the Southwest and of Northern Mexico, Putnam Anniversary Volume, G. E. Stechert & Co., New York, 1909, p. 414; also Physiological and Medical Observations among the Indians of the Southwestern United States and Northern Mexico, Bur. Am. Eth., Bull. 34, p. 132, 1908.

[9] *Op. cit.*, p. 134.

[10] Anthropometrical Observations on the Mission Indians of Southern California, Proc. A. A. A. S., XLIV, 262, 1895. The same series plus one additional stature is given by the same author in Zur Anthropologie der nordamerikanischen Indianer, Zeitschrift für Ethnologie, XXVII, 370, 1895.

1:Gifford E-5 (1915-1918)1926
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TABLE 14

Stature—Women

17 to 60 years of age

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Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	1	146		N. Paiute	3	160	
Yurok	13	153	3.89	E. Mono	3	156	
Karok	1	144		Washo	5	158	
Hupa	14	152	4.39	N. Miwok	1	151	
Wailaki	1	157		C. Miwok	1	152	
Kato	1	143		S. Miwok	4	155	
Yuki	25	148	4.93	W. Mono	7	156	
Huchnom	1	149		N. H. Yokuts	9	151	
N. Pomo	11	154	4.40	T. K. Yokuts	15	155	6.56
E. Pomo	1	164		Serrano	1	158	
Nomlaki	2	152		Luiseño	42	157	5.03
NW. Maidu (H.)	9	153		Cupeño	20	156	4.83
NE. Maidu	2	158		Cahuilla	25	158	4.82
Atsugewi	4	154		Diegueño	1	164	
Achomawi	10	153	2.66	Mohave	25	158	
Modoc	2	155		Yuma	5	161	
Klamath	5	160		Cocopa	1	163	

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TABLE 15

Head Length—Men

19 years of age and over

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[141]

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	196		Yahi	1	192	
Yurok	16	189	6.32	C. Yana	1	191	
Karok	2	187		N. Yana	1	195	
Chimariko	1	191		Atsugewi	6	189	
Hupa	13	191	5.18	Achomawi	9	192	
Wailaki	4	197		Modoc	5	186	
Yuki	28	195	5.58	Klamath	12	183	6.30
Huchnom	2	186		N. Paiute	6	195	
N. Pomo	12	191	4.95	E. Mono	3	188	
NE. Pomo	1	192		Washo	6	190	
E. Pomo	2	183		N. Miwok	1	188	
SE. Pomo	2	192		C. Miwok	9	184	
E. Patwin	9	190		S. Miwok	5	183	
V. Patwin	1	192		W. Mono	8	196	
Nomlaki	4	196		N. H. Yokuts	4	194	
NW. Maidu (V.)	5	189		Antoniano	1	189	
NW. Maidu (H.)	27	194	5.64	Barbareño	1	186	
NE. Maidu	6	192		Cahuilla	2	193	
S. Maidu	4	189					

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1:Gifford E-5 (1915-1918)1926
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Yurok NS31

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TABLE 16

HEAD LENGTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	186		Achomawi	13	180	5.67
Yurok	17	184	5.98	Modoc	3	179	
Karok	4	177		Klamath	6	177	
Hupa	16	194	5.71	N. Paiute	5	185	
Wailaki	3	186		E. Mono	5	180	
Kato	2	189		Washo	5	181	
Yuki	30	187	5.28	N. Miwok	1	185	
Huchnom	1	178		C. Miwok	7	177	
N. Pomo	13	181	7.00	S. Miwok	7	184	
E. Pomo	1	186		W. Mono	11	187	3.65
H. Patwin	2	180		N. H. Yokuts	9	181	
V. Patwin	1	179		Luiseño	1	180	
Nomlaki	2	187		Cupeño	1	183	
NW. Maidu (H.)	10	184	5.44	Cahuilla	6	186	
NE. Maidu	2	189		Diegueño	1	183	
S. Maidu	1	192		Cocopa	1	175	
Atsugewi	6	180					

TABLE 17

HEAD BREADTH—MEN

19 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	157		Yahi	1	163	
Yurok	16	158	4.60	C. Yana	1	155	
Karok	2	157		N. Yana	1	170	
Chimariko	1	154		Atsugewi	6	161	
Hupa	13	157	3.53	Achomawi	9	159	
Wailaki	4	147		Modoc	5	159	
Yuki	28	147	3.63	Klamath	12	164	5.57
Huchnom	2	146		N. Paiute	6	155	
N. Pomo	12	153	6.73	E. Mono	3	156	
NE. Pomo	1	150		Washo	6	158	
E. Pomo	2	160		N. Miwok	1	171	
SE. Pomo	2	161		C. Miwok	9	162	
H. Patwin	9	154		S. Miwok	5	163	
V. Patwin	1	162		W. Mono	8	147	
Nomlaki	4	156		N. H. Yokuts	4	156	
NW. Maidu (V.)	5	155		Antoniano	1	150	
NW. Maidu (H.)	27	154	5.94	Barbareño	1	152	
NE. Maidu	6	153		Cahuilla	2	156	
S. Maidu	4	164					

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
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TABLE 18

HEAD BREADTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	150		Achomawi	13	153	3.19
Yurok	17	152	3.95	Modoc	3	157	
Karok	4	152		Klamath	6	163	
Hupa	16	150	3.41	N. Paiute	5	145	
Wailaki	3	140		E. Mono	5	150	
Kato	2	144		Washo	5	152	
Yuki	30	144	4.79	N. Miwok	1	159	
Huchnom	1	144		C. Miwok	7	156	
N. Pomo	13	146	5.62	S. Miwok	7	163	
E. Pomo	1	161		W. Mono	11	144	2.43
H. Patwin	2	151		N. H. Yokuts	9	148	
V. Patwin	1	154		Luiseño	1	145	
Nomlaki	2	150		Cupeño	1	143	
NW. Maidu (H.)	10	145	4.80	Cahuilla	6	149	
NE. Maidu	2	149		Diegueño	1	154	
S. Maidu	1	153		Cocopa	1	154	
Atsugewi	6	158					

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TABLE 19

FACE LENGTH (NASION)—MEN

19 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	123		Yahi	1	131	
Yurok	16	122	5.15	C. Yana	1	130	
Karok	2	133		N. Yana	1	129	
Hupa	13	126	5.44	Atsugewi	6	126	
Wailaki	4	114		Achomawi	9	131	
Yuki	28	115	6.07	Modoc	5	125	
Huchnom	2	112		Klamath	11	124	8.27
N. Pomo	10	117	6.40	N. Paiute	6	125	
NE. Pomo	1	121		E. Mono	3	125	
E. Pomo	2	128		Washo	6	125	
SE. Pomo	2	126		N. Miwok	1	145	
H. Patwin	8	125		C. Miwok	9	129	
V. Patwin	1	126		S. Miwok	5	125	
Nomlaki	4	121		W. Mono	8	126	
NW. Maidu (V.)	5	122		N. H. Yokuts	4	124	
NW. Maidu (H.)	27	121	6.26	Antoniano	1	123	
NE. Maidu	6	122		Barbareño	1	109	
S. Maidu	4	125		Cahuilla	2	126	

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[141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Yokuts NS 29
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TABLE 20

FACE LENGTH (NASION)—WOMEN

17 years of age and over

Yu [141]

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	117		Achomawi	13	119	5.37
Yurok	17	112	5.21	Modoc	3	113	
Karok	4	117		Klamath	6	117	
Hupa	16	114	3.41	N. Paiute	5	117	
Wailaki	3	106		E. Mono	5	112	
Kato	2	107		Washo	5	120	
Yuki	30	107	5.72	N. Miwok	1	122	
Huchnom	1	104		C. Miwok	7	118	
N. Pomo	13	110	7.51	S. Miwok	7	122	
E. Pomo	1	117		W. Mono	11	114	4.99
H. Patwin	2	122		N. H. Yokuts	9	122	
V. Patwin	1	115		Luiseño	1	106	
Nomlaki	2	110		Cupeño	1	120	
NW. Maidu (H.)	10	113	5.74	Cahuilla	6	119	
NE. Maidu	2	113		Diegueño	1	120	
S. Maidu	1	127		Cocopa	1	129	
Atsugewi	6	121					

Yo [141]

TABLE 21

FACE BREADTH—MEN

19 years of age and over

Yu [141]

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	149		Yahi	1	132	
Yurok	16	148	4.44	C. Yana	1	148	
Karok	2	146		N. Yana	1	158	
Chimariko	1	152		Atsugewi	6	149	
Hupa	13	148	3.95	Achomawi	9	150	
Wailaki	4	147		Modoc	5	147	
Yuki	28	147	3.74	Klamath	12	150	5.09
Huchnom	2	151		N. Paiute	6	150	
N. Pomo	12	150	3.76	E. Mono	3	150	
NE. Pomo	1	140		Washo	6	151	
E. Pomo	2	147		N. Miwok	1	160	
SE. Pomo	2	149		C. Miwok	9	152	
H. Patwin	9	147		S. Miwok	5	151	
V. Patwin	1	144		W. Mono	8	145	
Nomlaki	4	147		N. H. Yokuts	4	148	
NW. Maidu (V.)	5	145		Antoniano	1	147	
NW. Maidu (H.)	27	148	5.08	Barbareño	1	143	
NE. Maidu	6	150		Cahuilla	2	151	
S. Maidu	4	155					

Yo [141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Yokuts NS29
Yurok NS31

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TABLE 22

FACE BREADTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	144		Modoc	3	144	
Yurok	17	140	4.48	Klamath	6	147	
Karok	4	140		N. Paiute	5	140	
Hupa	16	140	4.80	E. Mono	5	141	
Wailaki	3	134		Washo	4	145	
Kato	2	137		N. Miwok	1	145	
Yuki	30	138	3.83	C. Miwok	7	143	
Huchnom	1	136		S. Miwok	7	151	
N. Pomo	13	137	3.53	SE. Wintun	1	144	
E. Pomo	1	147		W. Mono	11	140	2.99
H. Patwin	2	145		N. H. Yokuts	9	138	
Nomlaki	2	140		Luiseño	1	134	
NW. Maidu (H.)	9	135		Cupeño	1	136	
NE. Maidu	2	140		Cahuilla	6	142	
S. Maidu	1	141		Diegueño	1	139	
Atsugewi	6	145		Cocopa	1	148	
Achomawi	13	141	2.86				

Yu [141]

Yo [141]

TABLE 23

NOSE LENGTH—MEN

19 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	54		Yahi	1	54	
Yurok	16	51	2.91	C. Yana	1	49	
Karok	2	58		N. Yana	1	55	
Chimariko	1	50		Atsugewi	6	54	
Hupa	13	54	4.19	Achomawi	9	56	
Wailaki	4	51		Modoc	5	53	
Yuki	28	50	4.97	Klamath	12	55	3.85
Huchnom	2	51		N. Paiute	6	57	
N. Pomo	12	49	4.68	E. Mono	3	55	
NE. Pomo	1	50		Washo	6	55	
E. Pomo	2	50		N. Miwok	1	65	
SE. Pomo	2	53		C. Miwok	9	56	
H. Patwin	9	53		S. Miwok	5	55	
V. Patwin	1	59		W. Mono	8	56	
Nomlaki	4	53		N. H. Yokuts	4	53	
NW. Maidu (V.)	3	56		Antoniano	1	52	
NW. Maidu (H.)	27	50	2.35	Barbareño	1	45	
NE. Maidu	6	48		Cahuilla	2	52	
S. Maidu	4	53					

Yu [141]

Yo [141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Yokuts NS 29
Yurok NS 31

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TABLE 24

NOSE LENGTH—WOMEN

17 years of age and over

Yu
[141]

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	51		Achomawi	13	50	2.58
Yurok	17	45	4.00	Modoc	3	47	
Karok	4	52		Klamath	6	49	
Hupa	16	47	3.32	N. Paiute	5	51	
Wailaki	3	47		E. Mono	5	54	
Kato	2	46		Washo	5	52	
Yuki	30	44	3.28	N. Miwok	1	47	
Huchnom	1	45		C. Miwok	7	53	
N. Pomo	13	44	2.63	S. Miwok	7	51	
E. Pomo	1	46		W. Mono	11	51	4.53
H. Patwin	2	50		N. H. Yokuts	9	50	
V. Patwin	1	44		Luiseño	1	42	
Nomlaki	2	45		Cupeño	1	53	
NW. Maidu (H.)	10	46	3.42	Cahuilla	6	48	
NE. Maidu	2	46		Diegueño	1	47	
S. Maidu	1	55		Cocopa	1	57	
Atsugewi	6	52					

Yo
[141]

TABLE 25

NOSE BREADTH—MEN

19 years of age and over

Yu
[141]

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	46		Yahi	1	42	
Yurok	16	42	2.75	C. Yana	1	42	
Karok	2	42		N. Yana	1	48	
Chimariko	1	48		Atsugewi	6	41	
Hupa	13	42	2.58	Achomawi	9	40	
Wailaki	4	46		Modoc	5	38	
Yuki	28	43	2.66	Klamath	12	40	2.14
Huchnom	2	46		N. Paiute	6	44	
N. Pomo	12	46	2.91	E. Mono	3	42	
NE. Pomo	1	42		Washo	6	43	
E. Pomo	2	44		N. Miwok	1	46	
SE. Pomo	2	48		C. Miwok	9	45	
H. Patwin	9	42		S. Miwok	5	43	
V. Patwin	1	44		W. Mono	8	43	
Nomlaki	4	43		N. H. Yokuts	4	43	
NW. Maidu (V.)	5	43		Antoniano	1	45	
NW. Maidu (H.)	27	43	2.62	Barbareño	1	41	
NE. Maidu	6	41		Cahuilla	2	44	
S. Maidu	4	44					

Yo
[141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Yokuts NS 29
Yurok NS 31

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TABLE 26

NOSE BREADTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Wiyot	3	41		Achomawi	13	37	1.81
Yurok	17	39	3.52	Modoc	3	36	
Karok	4	38		Klamath	6	38	
Hupa	16	37	2.81	N. Paiute	5	40	
Wailaki	3	39		E. Mono	5	41	
Kato	2	38		Washo	5	40	
Yuki	30	39	2.23	N. Miwok	1	40	
Huchnom	1	38		C. Miwok	7	41	
N. Pomo	13	39	2.46	S. Miwok	7	40	
E. Pomo	1	37		W. Mono	11	40	2.87
H. Patwin	2	40		N. H. Yokuts	9	40	
V. Patwin	1	38		Luiseño	1	34	
Nomlaki	2	39		Cupeño	1	39	
NW. Maidu (H.)	10	39	2.12	Cahuilla	6	36	
NE. Maidu (H.)	2	41		Diegueño	1	37	
S. Maidu	1	47		Cocopa	1	42	
Atsugewi	6	37					

Yu
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Yo
[141]

TABLE 27

EAR LENGTH—MEN

19 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
S. Maidu	4	74		Washo	6	69	
N. Yana	1	76		N. Miwok	1	76	
Atsugewi	6	68		C. Miwok	3	73	
Achomawi	8	71		S. Miwok	5	69	
N. Paiute	4	67		W. Mono	7	70	
E. Mono	3	68		N. H. Yokuts	4	71	

Yo
[141]

TABLE 28

EAR LENGTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Atsugewi	5	68		C. Miwok	3	72	
Achomawi	10	67	4.79	S. Miwok	7	66	
N. Paiute	5	66		W. Mono	7	64	
E. Mono	5	65		N. H. Yokuts	9	62	
Washo	5	67		Cocopa	1	67	
N. Miwok	1	62					

Yo
[141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Yokuts NS 29

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TABLE 29

EAR BREADTH—MEN

19 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
S. Maidu	4	39		Washo	6	34	
N. Yana	1	41		N. Miwok	1	36	
Atsugewi	6	36		C. Miwok	3	35	
Achomawi	8	36		S. Miwok	5	32	
N. Paiute	4	34		W. Mono	7	34	
E. Mono	3	37		N. H. Yokuts	4	31	

Yo
[141]

TABLE 30

EAR BREADTH—WOMEN

17 years of age and over

Group	No.	Mean	SD	Group	No.	Mean	SD
Atsugewi	5	32		C. Miwok	3	35	
Achomawi	10	33	1.92	S. Miwok	7	34	
N. Paiute	5	30		W. Mono	7	34	
E. Mono	5	34		N. H. Yokuts	9	30	
Washo	5	35		Cocopa	1	34	
N. Miwok	1	33					

Yo
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The following table lists the standard deviations for cephalic, facial, and nasal indices in fifteen groups in which the number of individuals is ten or more. The mean of these three standard deviations for each group is also given. The list reveals Southern Miwok as the least variable group and Northern Pomo as the most variable. I have earlier remarked that the Northern Pomo may be hybrids between the *Yuki* type and the *Broad-nosed Californian* subtype. If this is true it probably accounts for the high standard deviations.

TABLE 31

STANDARD DEVIATIONS—LIVING

Tribe	CI	FI	NI	Mean
Southern Miwok	2.20	3.61	4.70	3.50
Washo	2.30	3.84	5.29	3.81
Achomawi	4.24	3.58	4.60	4.17
Hupa	2.79	3.77	6.25	4.27
Central Miwok	3.16	4.47	5.68	4.43
Western Mono	2.76	4.08	7.32	4.72
Northwestern Maidu	2.91	4.07	7.29	4.76
Yurok	3.08	3.50	8.07	5.08
Klamath	3.82	5.41	6.82	5.26
Atsugewi	4.35	5.29	6.47	5.37
Northern Paiute	3.01	5.20	7.96	5.39
Yuki	2.96	3.85	9.61	5.48
Hill Patwin	3.84	2.94	10.00	5.59
Northern Hill Yokuts	3.33	5.12	8.51	5.65
Northern Pomo	4.11	5.21	10.82	6.71

Yo
[141]

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Tubatulabal NS 22
Yurok NS 31
Yokuts NS 29

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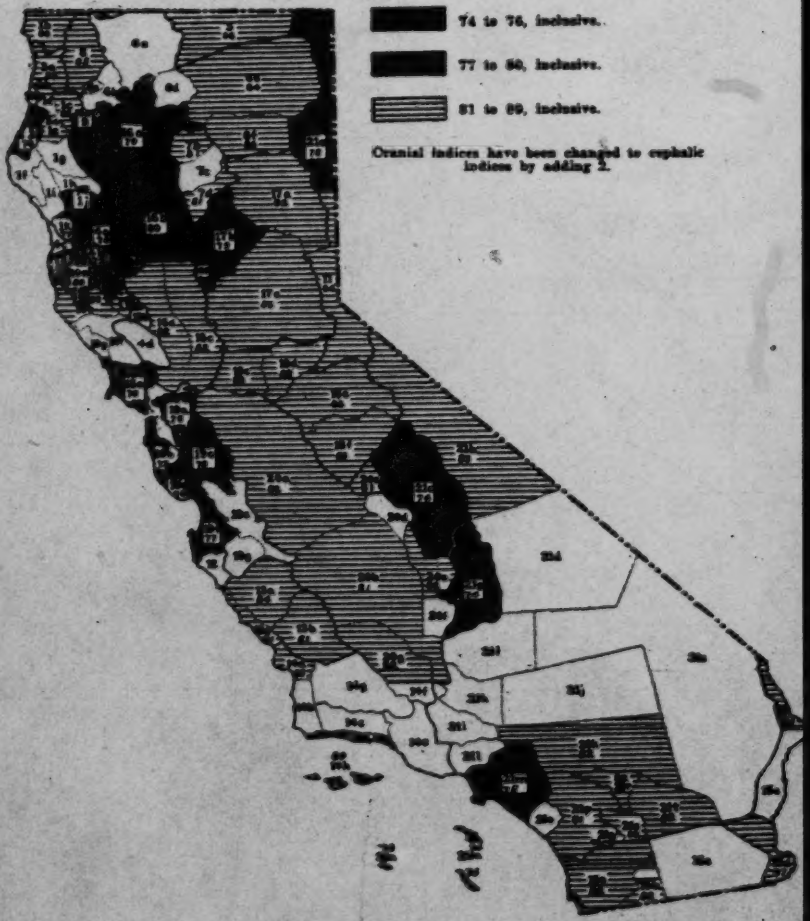
MAP 2

Average cephalic indices (living and cranial combined).


74 to 76, inclusive.
77 to 80, inclusive.
81 to 89, inclusive.
Cranial indices have been changed to cephalic indices by adding 2.

1:Gifford E-5 (1915-1918)1926
NS4 California Indians NS4
Tubatulabal NS 22
Yokuts NS 29
Yurok NS 31

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MAP 3

Physical types (living and cranial data combined).

Yuki type (including Yuki cranial type).
Western Mono type (including Santa Catalina cranial type).
Californian type, broad-nosed subtype (including San Joaquin cranial type).
Californian type, narrow-nosed subtype (including San Francisco, Santa Barbara, and Great Basin cranial types).
Californian type, tall subtype (including Buena Vista cranial type).

3: Latta Y-5 (1923-1948)1949 NS29 Yokuts NS29
Wukchumne

CHAPTER III

YOKUTS TRADE

A WUKCHUMNE TRADING EXPEDITION

One of my most interesting expeditions with Indians was made when I took the Henry Ichow and George Garcia families from the Kaweah River to Dunlap to gather clay for pottery, the black paint used in their ceremonies, and to trade basketry materials. The *Wukchumne* gathered *hupud* (hoo'-pud), or cladium roots, and *chawkish*, or bunch-grass, along the Kaweah. These they traded at Dunlap for *muhnokits* (muh-no'-kits), or black sword-fern root, and *ahnup*, the red outer wood of redbud. For several years I had been planning this expedition and was all expectation as we prepared to start.

Leaving Tulare at five a. m., I drove to the Kaweah River below Woodlake and began loading. There was a fifty pound flour sack full of small bundles of hupud and a large bundle of chawkish. There were several nests of baskets, tied up in flour sacks that had been ripped open. In them were brushes made of soap root husk, salt from salt grass and several roots and herbs with which I was not familiar. Some of these I placed in the trunk on the back of the car. Then I began loading the car. It was a seven passenger sedan, but it was surely stuffed when we were all aboard.

Ichow weighed at least three hundred pounds—I slightly less. We, with William and Virginia Garcia, occupied the front seat and from it to the dash and the top. Ada Ichow, Katie Garcia, her daughter, and the three oldest Garcia girls, Letha, Helen, and Melchor, piled into the rear seat. George, Johnnie and Howard Garcia occupied the two folding seats. Every inch of seat room in the rear compartment was taken up, either by Indians, or by bundles of trade materials.

The first stop was made on the grade leading down into the old Chris Evans' Rattlesnake Ranch, below old Auckland. I heard a grunt from Ada, which Henry translated into, "You stop here." I stopped and immediately learned that the old Pierce Arrow was blowing like a steam engine.

Ada and Ichow began giving instructions in the Wukchumne language. All but the youngest children scattered along the road and began searching the cut bank. The cut had